

Appln. No. 10/721,613  
Docket No. 14XZ129307/GEM-0107

## REMARKS / ARGUMENTS

### Status of Claims

Claims 1-21 are pending in the application. Claims 1-21 stand rejected. Applicant has amended Claims 1-21, and added new Claims 22 and 23, leaving Claims 1-23 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, second paragraph, 35 U.S.C. §103(a), and nonstatutory obviousness-type double patenting have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

### Objections to the Specification

The Examiner states "The abstract of the disclosure and the specification are objected to because 'a radiological thicknesses' is unclear... Correction is required."

Applicant has amended the Abstract to now recite "...A signal in terms of gray levels or in terms of acquired doses is converted into a *signal of* radiological thicknesses to carry out the processing..."

No new matter has been introduced as antecedent support can be found in the specification as originally filed, such as at Paragraphs [0010] and [0013], for example.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. The Examiner remarks "Correction of the following is required: 'the parameter that defines the maximum differential gain level in the starting dynamic range' as recited in claims 8-11 is missing from the specification." [paper 20061215, page 20]

Applicant has amended Claims 8 through 11 to now recite "... a parameter that defines a level of maximum differential gain in the basic dynamic range."

No new matter has been introduced as antecedent support can be found in the specification as originally filed, such as at Paragraphs [0011] and [0026], for example.

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Specifically, Applicant submits that the specification discloses "...a dynamic window WW (which controls the maximum differential gain (contrast)) locked by its center WC (the level of maximum differential gain)..." at paragraph [0011] and "While the graph of Figure 1 shows a display window in terms of basic dynamic range, it may happen that the practitioner wishes to modify the position and/or the width of the display window, WC and WW respectively." Applicant respectfully submits that the specification provides proper antecedent basis for the now claimed "...parameter [WC] that defines a level of maximum differential gain in the basic dynamic range..."

Accordingly, Applicant respectfully submits that the objections to the specification have been addressed, and requests reconsideration and withdrawal of these objections.

**Rejections Under 35 U.S.C. §112, Second Paragraph**

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

**Regarding Claim 1**

The Examiner comments that for claim 1, "a radiological thicknesses" is unclear.

Applicant has amended Claim 1 to now recite "...an image of radiological thicknesses..."

No new matter has been introduced, as antecedent support can be found in the specification as originally filed, such as at Paragraphs [0010] and [0033], for example.

The Examiner comments that "the dynamic range of the image of reduced dynamic range and heightened contrast is compressed" is unclear, because this could be restating the fact that the "processing the context image ... to obtain an image with reduced dynamic range" has produced a compressed dynamic range, or this could mean that the dynamic range is being reduced (or compressed) a second time.

Applicant has amended Claim 1 to now recite "...compressing the dynamic range of the image with reduced dynamic range and heightened contrast..."

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No new matter has been introduced, as antecedent support can be found in the specification as originally filed, such as at Paragraph [0033], for example.

The Examiner comments that the phrase "the anatomical structures" lacks antecedent basis.

Applicant has amended Claim 1 to now recite "...structures of the object...".

No new matter has been introduced, as antecedent support can be found in the specification as originally filed, such as originally filed Claim 1, for example.

In view of the foregoing amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant considers to be traversed.

Regarding Claim 2

The Examiner comments: "'at their position' is unclear. Please specify the noun that corresponds to the pronoun 'their'".

Applicant has amended Claim 2 to now recite "...values of the context image at the position *of the signals of the context image*."

No new matter has been introduced, as antecedent support can be found in the specification as originally filed, such as at paragraph [0015] and [0020], for example.

In view of the foregoing amendment, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant considers to be traversed.

Regarding Claims 3 and 4

The Examiner comments: "'or by a statistical filtering of another type' is unclear. Another type should be specified or this phrase removed from the claim."

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Applicant has amended Claims 3 and 4 to remove the phrase "or by a statistical filtering of another type".

In view of the foregoing amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections, which Applicant considers to be traversed.

Regarding Claims 5 through 7

The Examiner comments "the function" lacks antecedent basis.

Applicant has amended Claims 5 through 7 to now recite "...a function".

In view of the foregoing amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections, which Applicant considers to be traversed.

Regarding Claims 8 through 15

The Examiner comments that "the user" lacks antecedent basis.

Applicant has amended Claims 8 through 15 to now recite "...a user".

In view of the foregoing amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections, which Applicant considers to be traversed.

Regarding Claims 16 through 21

The Examiner comments "the computations" and "the two functions" lack antecedent basis.

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Applicant has amended Claims 16 through 21 to now recite, inter alia  
“...computations of two functions...”.

In view of the foregoing amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections, which Applicant considers to be traversed.

#### Rejections Under 35 U.S.C. §103(a)

Claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nicolas et al. (European Patent No. 1 113 392, hereinafter Nicolas) in view of Neitzel et al. (U.S. Patent No. 5,550,888, hereinafter Neitzel).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

#### Regarding Independent Claim 1

The Examiner acknowledges that Nicolas does not disclose processing the context image by means of a second table computed from the image of the radiological thicknesses to obtain an image of coefficients which will then weight the image of the details to obtain an image of enhanced details, and looks to Neitzel to cure this deficiency. [paper 20061215, page 4]

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As set forth above in response to rejection under 35 U.S.C. §112, second paragraph, Applicant has amended Claim 1 to now recite, inter alia:

***"...compressing the dynamic range of the image with reduced dynamic range and heightened contrast so that it is contained within the dynamic range of an imaging device with a small dynamic range, this small dynamic range of the imaging device being smaller than the wide dynamic range of the acquired image, thereby permitting an acquired image originally having a wide dynamic range to be displayed with heightened contrast on an imaging device having a smaller dynamic range."***

Applicant respectfully submits that in addition to failing to disclose the claimed "...processing the context image by means of a second table...", Nicolas fails to disclose the now claimed ***"...compressing the dynamic range of the image with reduced dynamic range and heightened contrast so that it is contained within the dynamic range of an imaging device with a small dynamic range, this small dynamic range of the imaging device being smaller than the wide dynamic range of the acquired image, thereby permitting an acquired image originally having a wide dynamic range to be displayed with heightened contrast on an imaging device having a smaller dynamic range."***

Applicant further submits that Neitzel lacks disclosure of the now claimed ***"...compressing the dynamic range of the image with reduced dynamic range and heightened contrast so that it is contained within the dynamic range of an imaging device with a small dynamic range, this small dynamic range of the imaging device being smaller than the wide dynamic range of the acquired image, thereby permitting an acquired image originally having a wide dynamic range to be displayed with heightened contrast on an imaging device having a smaller dynamic range."***

Furthermore, Applicant respectfully submits that, contrary to the claimed invention, Neitzel discloses "The image values A [corresponding to the claimed ***image with reduced dynamic range and heightened contrast***] obtained by summing are applied to the image output unit (not shown)." (clarification added) [Neitzel, col 10, lines 48-50]

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As such, Applicant submits that Neitzel is absent any teaching or suggestion of performing the additional claimed "compressing" step.

Accordingly, Applicant respectfully submits that the combination of Nicolas and Neitzel fail to teach or suggest each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs, and therefore cannot properly be used to establish a prima facie case of obviousness.

Regarding Claims 8 through 11

In alleging obviousness, the Examiner asserts "For claims 8-11 Nicolas and Neitzel both disclose that the compression of the dynamic range is controllable by parameters selected by the user." [paper 20061215, page 5].

Applicant respectfully submits that the above remark appears to be merely a broad, conclusory summary of the claim language, without specific recitation of where each and every element of the claimed invention may be found within either Nicolas or Neitzel.

Specifically, Applicant respectfully submits that both Nicolas and Neitzel are absent a teaching or suggestion of the claimed "...*the compressing of the dynamic range is obtained by a positive and non-decreasing function, characterized by two parameters adjustable by a user, a parameter that controls the maximum differential gain, and a parameter which defines a level of maximum differential gain in a basic dynamic range...*", which is specifically claimed in the instant invention.

Accordingly, Applicant respectfully submits that a broad, conclusory summary of the claim language without specific direction within the references as to where each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs may be found, does not in and of itself establish a prima facie case of obviousness. Absent a specific teaching or suggestion in the References of each and every element of the claimed invention arranged as in the claim, the References cannot support a prima facie case of obviousness.

In the event that the Examiner maintains this rejection, Applicant respectfully requests a non-final action that specifically states where the art of record teaches or

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suggests such limitations so that Applicant is afforded an appropriate opportunity to respond.

Regarding Claims 12 through 15

In alleging obviousness, the Examiner asserts "For claims 12-15 Neitzel discloses that the operations of processing the images of context and details are modified by a function selected by the user." [paper 20061215, page 5].

Applicant respectfully submits that the above remark appears to be merely a broad, conclusory summary of the claim language, without specific recitation of where each and every element of the claimed invention may be found within Neitzel.

Specifically, Applicant respectfully submits that Neitzel is absent disclosure of the claimed "...the operations of processing the images of context and the images of the details are modified as a function of the value that controls the maximum differential gain selected by a user ...", which is specifically claimed in the instant invention.

Accordingly, Applicant respectfully submits that a broad, conclusory summary of the claim language without specific direction within the reference as to where each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs may be found, does not in and of itself establish a prima facie case of obviousness. Absent specific disclosure in the Reference of each and every element of the claimed invention arranged as in the claim, the Reference cannot support a prima facie case of obviousness.

In the event that the Examiner maintains this rejection, Applicant respectfully requests a non-final action that specifically states where the art of record teaches or suggests such limitations so that Applicant is afforded an appropriate opportunity to respond.

Regarding Claims 16 through 21

In alleging obviousness, the Examiner asserts "For claims 16-21 Nicolas discloses that the functions used to modify the images are predefined as functions of proportion of object structure as discussed in the title and abstract." [paper 20061215, page 5].

Applicant respectfully submits that the above remark appears to be merely a



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broad, conclusory summary of the claim language, without specific recitation of where each and every element of the claimed invention may be found within Nicolas.

Specifically, Applicant respectfully submits that Nicolas is absent disclosure of the claimed “...*computations of two functions used to modify the images of context and of the details are predefined as functions of proportion of object structure, and are adapted by a calibration procedure to each radiological thickness image ...*”, which is specifically claimed in the instant invention.

Accordingly, Applicant respectfully submits that a broad, conclusory summary of the claim language without specific direction within the reference as to where each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs may be found, does not in and of itself establish a prima facie case of obviousness. Absent specific disclosure in the Reference of each and every element of the claimed invention arranged as in the claim, the Reference cannot support a prima facie case of obviousness.

In the event that the Examiner maintains this rejection, Applicant respectfully requests a non-final action that specifically states where the art of record teaches or suggests such limitations so that Applicant is afforded an appropriate opportunity to respond.

In view of the foregoing, Applicant submits that the combination of References cited by the examiner each fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

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### Double Patenting

Claims 1-21 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-18 of U.S. Patent No. 6,415,015 to Nicolas (Nicolas '015) in view of U.S. Patent No. 5,550,888 to Neitzel et al.

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest *each and every element of the instant invention arranged in such a manner as to perform as the claimed invention performs*. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Applicant respectfully submits that for at least the same reasons set forth above with regard to obviousness under 35 U.S.C. §103(a), the combination of the references cited by the Examiner fail to cure the deficiencies of both Nicolas '015 and Neitzel, as discussed above with reference to Nicolas (EP '392) and Neitzel, to teach or suggest each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs, and therefore cannot properly be used to establish a prima facie case of obviousness for the non-statutory obviousness-type double patenting rejection.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the nonstatutory obviousness-type double patenting rejection, which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, second paragraph, 35 U.S.C. §103(a), and non-statutory obviousness-type double patenting, have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

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**Regarding New Claims 22 and 23**

Applicant has added new Claim 22, which depends from Claim 1, and new Claim 23, which depends from Claim 22 to now claim disclosed but previously unclaimed subject matter. No new matter has been added as antecedent support may be found in the application as originally filed, such as at Paragraphs [0012], and [0025], and the originally filed Claims, such as Claims 5-7, for example.

In view of the amendment and remarks set forth above regarding the allowability of Claim 1, Applicant submits that new Claims 22 and 23 are directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

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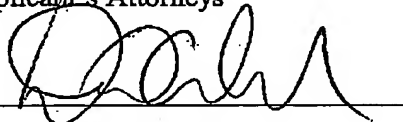
The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 50-2513.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

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